# Analysis Need Mapping Model Development Potency Village Open Data Based in the Gulf Region Tomini in KKN Courses

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## INTRODUCTION

Vocational education in Indonesia is often identified with vocational education, both of which are oriented towards preparing students for work. Vocational education is an educational program at the higher education level that aims to prepare personnel who can define expertise and skills in their fields, are ready to work and able to compete globally . Meanwhile, vocational education is secondary education which includes SMK and MAK to prepare students to become workers in certain fields. The purpose of implementing vocational education is to alleviate poverty, increase local revenue, improve the quality of the workforce, increase welfare, strengthen and conserve culture and values (Sudira, 2017). From a formal juridical perspective, vocational education in Indonesia is held at SMK and MAK. In line with regional autonomy, the development of the implementation of vocational education in SMK and MAK is carried out by the provincial government by taking into account the advantages of local potential both in the economic, social and regional cultural sectors.

Vocational/vocational education as one of the educational institutions for the development of human resource (HR) work competencies. This will succeed in developing the essence and existence of human beings through vocational education that is popular in the community, cultured with competence in the order of life with local, national, regional and global dimensions. As a product of society, vocational/vocational education cannot be separated from the society in which vocational education is developed. Vocational/vocational education grows from the community, develops with the culture and traditions of the local community, pays attention to local wisdom, local excellence, regional potential, community support, community participation and cooperation, there is a strong consensus between the community and vocational education institutions. The vision of vocational education should be congruent with the vision of the community where vocational education is developed (Sudira, 2017).

However , development education vocational education in Indonesia yet fully in accordance with the concept put forward Sudira (2017), where is education vocational developed with notice area potential . Most  development education vocational not enough notice regional potential , as happened in the Bay Area Tomini . Tomini **Bay is the largest bay in Indonesia, with an area of more than** 6,000,000 hectares (ha) ( Pramudji , 2018) covering 10 districts , 75 sub-districts , 528 villages in three provinces, namely North Sulawesi, Central Sulawesi and Gorontalo ( Pokja UNG Village , 2021a) . as one For example , vocational education in Gorontalo Province is held at the secondary and higher education levels, consisting of 58 Vocational High Schools (SMK) and 6 ( six ) Higher Education Universities (Dapo, 2022; Mulyanto and Novian, 2020). Available study programs are dominated by ICT field programs, namely 48.28% , and less notice potency area . as one area in the Gulf Region Tomini , Gorontalo has Lots potential in the field marine and fisheries .

The Tomini Bay area is located on the equator and on the boundary line for the spread of Asian flora and fauna, which is then determined differently based on the type of flora and fauna, or what is known as the Wallace-Weber line. In addition, the Tomini Bay area is included in the *coral triangle initiative area* or the world's coral triangle triangle (Pra mudji , 2018 ). As an area crossed by the equator , the Gulf Tomini has potential fishery resources, biodiversity of marine and land biota . Tomini Bay has the beauty of spreading 1,031 hectares of coral reefs and 785.10 hectares of mangrove forests (Arham, 2020). Besides that , there are hundreds of dive spots all world class, from the types of reefs of Apollo, pinnacle, tower, and barracuda, colorful fish, dolphins, so that this area has the potential to be developed as the widest marine tourism in the world. The waters of Tomini Bay are unique because the waves are relatively small, so the opportunity to develop aquaculture is very potential. The condition of the beach is sloping, the coastal area of Tomini Bay has the potential for coastal cultivation (ponds), spread in almost all districts, both in North Sulawesi, Gorontalo and Central Sulawesi (Arham, 2020).

However, even though Tomini Bay has considerable economic potential and social capital, it is in contrast to the lives of its people, this is shown by the high poverty rate. Of the three provinces within the Tomini Bay area, each region (regency) has a high poverty rate in this region. South Bolaang Mongondow Regency in 2019 the poverty rate reached 13.27 percent the highest of 15 districts/cities in North Sulawesi, Boalemo Regency 18.87 percent among the 6 districts/cities in Gorontalo the highest and Tojo Una-Una Regency the poverty rate was 17, 16 percent or the second highest poverty rate in Central Sulawesi. At the provincial level, the poverty rate for Gorontalo Province and Central Sulawesi Province is rank 5th and 9th respectively by 15.61% and 13%. The quality of human resources as measured by the HDI level shows that the areas in the Tomini Bay Area are quite concerning because the lowest HDI rate is experienced by Bolaang Mongondow Selatan Regency (North Sulawesi), namely 65.28, in Central Sulawesi Province is Tojo Una- Una with mark 64.52 ( Due et al , 2021).

Based on condition related development education vocational training and development of the Gulf Region Tomini such , is required effort For overcome height number poverty and low HDI level in the Gulf Region Tomini . Gorontalo State University (UNG ) as one State College in the Gulf Region Tomini take role important in development of the Gulf Region Tomini . this seen in UNG Vision 2019-2023, which defines the vision of "UNG Excellent and Competitive" with a focus on contributing to regional development in the Tomini Bay Area. Based on the UNG Strategic Plan (2019), UNG has made Tomini Bay a laboratory and study center for all fields of science, so that in the future UNG will become a place to "ask questions" about the Tomini Bay area through the establishment of the Tomini Resource Center (TRC) at UNG. In line with it , UNG has do reorientation implementation Tridharma College with focus on the development of the Bay Area Tomini . One of them is activity Studying Work Real (KKN).

CCN is eye studying must for whole UNG students , where students must do activity devotion to public for 2 (two) months in villages in Gorontalo Province and its surroundings. Since In 2020, the implementation of KKN began focused on villages in the Bay Area Tomini which includes Gorontalo Province , North Sulawesi and Central Sulawesi. Student KKN participants do various activity social based on results analysis problems and needs society . Besides that , student KKN participants together party government the village to be the location of the Community Service Program excavation and mapping potential village . Potential data village needed in planning future village programs will entered in Term

Development Plan Intermediate village ( RPJMDes ). However , potential data villages collected by KKN participants have not managed optimally either by party village nor UNG side . Potential data village archived party village Good through board potency village , and other media that are general Still characteristic *offline* . Whereas UNG parties receive potential data collected by students form KKN report in form *hard copy* . As a result potential data village relatively only known by the parties village course , though If can can be accessed by other parties potentially for development potency village the including development education appropriate vocational with potency village the.

Based on problem , a mapping model is needed potency village that can integrate potential data from the villages in the Bay Area Tomini and can accessed in a manner open by the owner interests and society general . this model based on open data, namely data that is free used , used back and redistributed back by everyone , just depending on requirements the nature and divisions possessed ( *Open Knowledge Foundation* , 2013). Study This aim For analyze need mapping model development potency village based on open data in the Gulf Region Tomini on the eye Community Service Program.

METHOD
Method used in study This is method descriptive quantitative . Method This used For describe need mapping model development potency village based on open data on the eye Community Service Program. Required data in study This is profile implementation mapping potency village on the eye KKN lectures and data needs implementation mapping potency village . Research data sources This is the primary data derived from student KKN participants were 42 students from 5 KKN locations . Data collection techniques used is questionnaire . Data analysis technique used is descriptive quantitative .

DISCUSSION
Results
*The results of the analysis of the implementation of village potential mapping in the KKN course*
The initial analysis was carried out on the implementation of village potential mapping in the KKN course. Based on the results of a preliminary study of students who had carried out KKN activities, a mean score of 23.22 was obtained and they were included in the unfavorable category. The implementation of village potential mapping in the KKN course includes several indicators, namely: implementation of potential mapping, village potential mapping formats/guidelines, and village potential mapping training. Analysis results implementation mapping potency village shown in Table 1.

Table 1 Analysis Results Implementation Mapping Potency Village

| No. | Aspect/ Statement | Choice | | Criteria |
| | | Yes (%) | No (%) | |
| --- | --- | --- | --- | --- |
| Implementation of Village Potential Mapping in KKN Courses | | | | |
| 1. | Have you ever mapped the potential of the village in the implementation of KKN? | 32 (76,19) | 10 (23,81) | Good |
| 2. | Is it possible to map the potential of your village using | 0 (0) | 42 (100) | Not good |

| No. | | Yes | No | Criteria |
|---|---|---|---|---|
| | the format issued by LP2M UNG | | | |
| 3. | Were you given training on how to map village potential in KKN activities? | 0 (0) | 42 (100) | Not good |
| 4. | Is the potential of the village being mapped sufficient? | 7 (16,67) | 35 (83,33) | Not good |
| | Average (%) | 23,22 | 76,78 | Not good |

Based on the results of the preliminary study, the following information was obtained : a) 23.81% of KKN participating students did not carry out village potential mapping activities in KKN, even though this had to be done in KKN activities. b) The village potential mapping activity was carried out without using a guide/format from LP2M UNG as the manager of KKN activities. The available guidelines/formats are still general in nature regarding the implementation of KKN, not covering the implementation of village potential mapping. c) 83.33% of students participating in the KKN stated that the potential of the collected villages had not been adequately mapped.

*The results of the analysis of student needs in the implementation of village potential mapping in the KKN course*
Analysis of student needs includes indicators of availability of guidelines for implementing village potential mapping in KKN activities, availability of media to map village potential, availability of village potential data prior to KKN implementation, availability of access to village potential data for the community, and responses to the need for a village potential mapping model in KKN activities. Analysis results implementation mapping potency village shown in Table 2 .

Table 2 Analysis Results Need Implementation Mapping Potency Village

| No. | Aspect/ Statement | Choice | | Criteria |
|---|---|---|---|---|
| | | Yes (%) | No (%) | |
| The needs of students in implementing Village Potential Mapping in Real Work Lecture Courses | | | | |
| 1. | Do you have a village potential mapping guide issued by LP2M? | 0 (0) | 42 (100) | Not good |
| 2. | Do you use some kind of application to map village potential? | 0 (0) | 42 (100) | Not good |
| 3. | Do you have a village potential mapping application guide? | 0 (0) | 42 (100) | Not good |
| 4. | Do you have difficulty mapping village potential? | 32 (76,19) | 10 (23,81) | Good |
| 5. | Does the village where you carry out the KKN have a database of previous village potentials? | 0 (0) | 42 (100) | Not good |
| 6. | Can the village potential data be reprocessed as needed? | 0 (0) | 42 (100) | Not good |

| | | | | |
|---|---|---|---|---|
| 7. | Can the general public access village potential information? | 0 (0) | 42 (100) | Not good |
| 8. | Would you be happy if you could access village potential from several villages, sub-districts and districts? | 42 (100) | 0 (0) | Very good |
| 9. | Do you agree if an open data-based village potential mapping model is developed? | 42 (100) | 0 (0) | Very good |
| | | 33,33 | 66,67 | Not good |

The results of the student needs analysis questionnaire in carrying out village potential mapping, obtained an overall average score of 33.33 which is in the unfavorable category. These results indicate that the implementation of village potential mapping activities in KKN has not been carried out properly. 76.19% of students experience difficulties in mapping village potential. This is because village potential mapping is still carried out conventionally by recording it in books or form sheets which are then recapitulated and recorded on the potential data board at the village office. As a result, the media is not yet available as a tool for mapping village potential, there is no village potential database available either in the village or at LP2M UNG, and there is still limited data and information on village potential that can be processed and reused by those who need it. there is no specific guideline regarding village potential mapping, what does exist is a general guideline on the implementation of KKN. To overcome these problems, the survey results show 100% students agree to develop a mapping model for village potential in KKN activities.

Discussion

A number of effort has done For overcome height number poverty and low HDI level in the Gulf Region Tomini . one  continued effort  done is optimizing potential of each region in the region Tomini Bay . Various activity promotion potential of the Gulf Region Tomini has carried out by the government center and area both scale local , national even international like Sail Tomini , Festival Bay Tomini , Festival Charm Boalemo , and promotional events other . Effort development of the Gulf Region Tomini is also carried out by Universities in the Bay Area Tomini in form of Education, Research , and Service to the Community.

Another effort made by UNG is initiate the formation of the Special Economic Zone (SEZ) of the Bay Tomini . It is important to develop the Tomini Bay area into a SEZ considering that the current global economic order pays attention to the interconnection of economic resources. Because the geographical location of Tomini Bay is in three different administrative areas, a policy is needed to integrate it as a special area. The formation of this special area can develop an area-based development system that is jointly managed by the Provinces of North Sulawesi, Gorontalo Province and Central Sulawesi Province. One of the strategies for integrating the Tomini Bay area into a SEZ is to make this area based on rural areas. This is done so that the problem of poverty which is dominated by rural communities can be alleviated ( Pokja UNG Village , 2021 b ).

Based on the problems obtained through needs analysis, then a conceptual model is designed from the developed model. This conceptual model combines 2 (two) village potential mapping methods, namely the participatory method and the open data application method. When taking the KKN course, students mapped village potential

using a participatory method, in which data collection was carried out by involving the village community. Participatory results of data that are ready to be published to the public are inputted into an open data-based application. Open data is a concept about data that is freely available to be accessed and utilized by the public. Open data according to *the Open Knowledge Foundation* (2013) is data that is free to use, reuse and redistribute by everyone, depending only on the nature and dispensability requirements possessed. Open Data is free data used , used back and redistributed back by everyone , just depending on requirements the nature and divisions possessed ( *Open Knowledge Foundation* , 2013). The application of open data is one effort For build more government _ open , participative , and innovative through commitment *Indonesian Open Government* (OGI). OGI is form concrete seriousness Indonesian government inside carry out sector reforms public in Indonesia thoroughly (OGI, 2012). Through OGI expected ideas, initiatives , and practices are born openness government can _ accelerate achievement of targets and priorities national mainly inside _ realizing governance _ clean , effective , democratic , and reliable government . A number of study related utilization of open data has conducted by Gunawan & Amalia (2016); Luranti , et al (2017); Safaria , et al (2018); Safaria , et al (2019); and Sitokdana (2015).

In this application village potential is made in the form of data sets as needed. A data set is a set of data arranged in a structured manner which is presented in tabular form, either in the form of direct input data to the application, or data extraction from existing data in CSV (Comma *Separated Values* ) format. A CSV file is a plain text file, can only contain numbers and letters, and arranges the data contained in it in the form of a table or form. CSV files are generally used to exchange data, usually when there is a large amount of it, between different applications. This data can be accessed, used, reused, and redistributed. The conceptual model is presented in Figure 1.
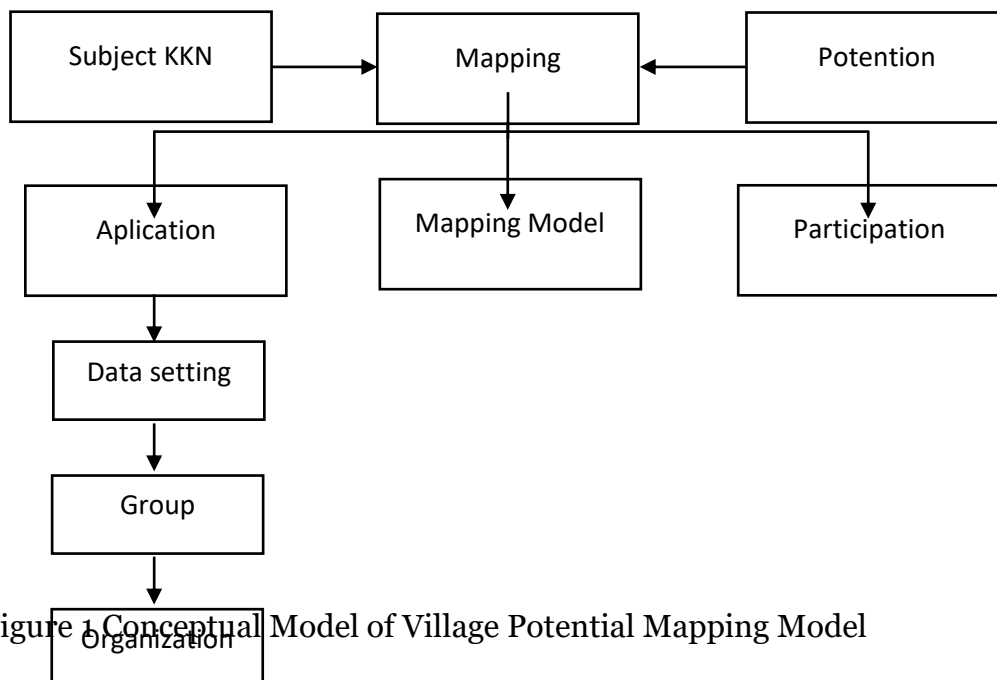


Figure 1 Conceptual Model of Village Potential Mapping Model

kindly general , mapping potency village done use method participatory , which includes mapping spatial , social, and sekotral (Wibowo & Alfarisy , 2020). Stages method participatory consists from : Deliberations on mapping planning, deliberations on village boundary agreements and agreements, mapping technical training, surveys or transects (collection of field data), data processing and

delineation, verification of survey results, correction of data/images if necessary and signing of minutes, printing of maps, and map validation. Potential mapping is also carried out using digitization methods and information systems as carried out by Fauzi & Putra (2015) , Srirejek et al (2020), and Nugraha (2021) . Some of these mapping methods in general have succeeded in mapping village and regional potentials, but still limited to data from 1 ( one ) area and not yet integrate data from a number of area .

Mapping models potency village based on open data that will developed is a mapping model potency villages that use a web portal that provides potential data village that can accessed by the public in a manner open and detailed . This web portal containing potency village in the Tomini Bay Area . Every village own access For do inputting potential data each village . Potential data villages inputted by each village integrated in a potential web portal Tomini Bay Area village . So that when access the web portal , community general can see , use , use back , and disseminate potential data villages in the Tomini Bay Area . This web portal will used student UNG KKN participants who did collection , excavation , and mapping potency village in the Bay Area Tomini . Likewise _ _ with government village can do mapping potency village through the web portal .

With a mapping model potency based on open data public can with easy access and obtain potential data village in the Bay Area Tomini needed . _ Besides that is , the data generated by this web portal can processed returned by society in accordance need . With this model , it is expected can help party government village in map and develop potency source Power nature and resources Power man in effort support development of the Special Economic Zone of the Gulf Region Tomini .

CONCLUSION

Based on the results of the analysis of the needs of KKN participating students in mapping village potential which is one of the main tasks and objectives in implementing KKN at UNG. The results of the needs analysis show that the implementation of village potential mapping in the KKN course has not been carried out properly and is less effective. This is caused by several factors, including: the unavailability of formats and guidelines for carrying out village potential mapping, the unavailability of media as a tool to assist in mapping village potential, the unavailability of village potential databases both in the village and at LP2M UNG as KKN managers, and the unavailability adequate access to village potential for the community. So based on the results of the needs analysis it can be concluded that a model for mapping village potential is needed in the KKN course which can overcome the problem of the ineffectiveness of implementing village potential mapping in the KKN course.

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